Answer Key -- Resources and Development

Chapter 1 · Geography

Reading Guide · Glossary · Comprehension · Practice Questions · 10 Puzzles

NCERT Companion Workbook · Based on “Contemporary India II, Geography, NCERT Class X”

Comprehension Questions -- Answered

Q1. What conditions must be met before something in nature counts as a resource?

Answer: A natural object becomes a resource only when it is technologically accessible, economically worth extracting and acceptable within the local culture. Simply existing in nature is not enough; human ability and willingness to use it matters just as much. This is why the chapter insists resources are not free gifts but the outcome of human effort and technology.

Q2. Why did unregulated use of resources create social and ecological problems?

Answer: Treating resources as free led a few people to accumulate them while others were left with little, widening the gap between rich and poor. The same indiscriminate use also caused global problems such as warming, ozone depletion and pollution. Both outcomes showed that resource use without planning damages both society and the environment together.

Q3. What is meant by sustainable development, and why did the Rio Earth Summit matter for it?

Answer: Sustainable development means growing the economy today without compromising the ability of future generations to meet their own needs. The 1992 Rio Earth Summit brought together world leaders who agreed on Agenda 21, a shared plan for pursuing this kind of development globally. It marked one of the first coordinated international commitments to balance growth with environmental protection.

Q4. Why does India need resource planning at different levels?

Answer: India's resources are spread unevenly; some states are rich in minerals but poor in water, and others are the reverse. Planning at the national, state, regional and local level helps match each area's resource strengths and gaps with realistic development goals. Without this coordination, resource-rich regions could still remain economically backward for lack of technology or infrastructure.

Q5. How is net sown area different from gross cropped area?

Answer: Net sown area is simply the actual land on which crops have been sown and harvested in a year, counted once regardless of how many times it was cropped. Gross cropped area adds the extra area sown more than once in the same year to that net figure. The difference therefore reflects how intensively a piece of farmland is being used.

Q6. What human activities have accelerated land degradation in India?

Answer: Deforestation, overgrazing, mining and quarrying have all stripped vegetation cover and disturbed the land surface in different regions. Over-irrigation in states like Punjab and Haryana has raised salinity and waterlogging, while industrial effluents and mining waste have polluted both land and water. These activities push land degradation faster than natural recovery processes can offset.

Q7. Describe the main differences between bangar and khadar soils.

Answer: Bangar is the older alluvial soil, lying above the active floodplain and containing more calcium nodules, while khadar is the newer, more finely textured and more fertile soil found closer to riverbeds. Because khadar is renewed by fresh silt during floods, it tends to be more productive for intensive cultivation. Both are still part of the same alluvial soil family found across the northern plains.

Q8. Why is black soil particularly suited to cotton cultivation?

Answer: Black soil, or regur, is made of very fine clayey particles that hold moisture well, which matters for a crop like cotton that needs sustained soil moisture between waterings. It also carries useful nutrients such as calcium carbonate and potash. Because it developed from weathered lava rock over the Deccan trap, the soil's chemistry and texture happen to match cotton's needs closely.

Short-Answer Practice -- Model Answers

Q1. Which soil type dominates the Deccan plateau region?

Answer: Black soil, also called regur.

Reasoning: *It formed from weathered lava flows of the Deccan trap, which gave it a clay-rich, moisture-retentive texture well suited to that geology.*

Q2. Name one measure used to control erosion on hill slopes.

Answer: Terrace farming or contour ploughing.

Reasoning: *Cutting slopes into steps, or ploughing along a slope's level lines, both slow the speed of running water so it carries away less soil.*

Q3. Why is Rajasthan rich in some resources but poor in others?

Answer: It has abundant solar and wind energy potential but very limited water resources.

Reasoning: *Its dry, sun-drenched, open terrain favours renewable energy generation, while the same low-rainfall climate leaves it short of usable water.*

Q4. What does the statement 'resources are not free gifts of nature' mean?

Answer: Raw material only becomes a resource once human technology and economic ability make it usable.

Reasoning: *Coal lying underground is only a resource once mining technology, transport and demand make extracting it worthwhile, showing resources depend on human capability as much as nature.*

Q5. Why are Jharkhand, Chhattisgarh and Madhya Pradesh described as mineral-rich states?

Answer: Their geological structure holds large mineral and coal deposits.

Reasoning: *Their location on old peninsular rock formations gives them ore-bearing strata that are largely absent from the younger alluvial soils of the northern plains.*

Objective Practice

A. Multiple Choice Questions

1. Which is the main cause of land degradation in Punjab, according to the chapter?

a) Intensive cultivation

b) Deforestation

✓ **c) Over-irrigation**

d) Overgrazing

2. In which state is terrace cultivation especially well developed?

a) Punjab

b) Plains of Uttar Pradesh

c) Haryana

✓ **d) Uttarakhand**

3. In which state is black soil predominantly found?

a) Uttar Pradesh

✓ **b) Maharashtra**

c) Rajasthan

d) Jharkhand

4. Resources classified as individual, community, national or international are grouped on the basis of what?

a) Origin

✓ **b) Ownership**

c) Exhaustibility

d) Status of development

5. Which of these is a non-renewable resource?

a) Sunlight

b) Wind

✓ **c) Coal**

d) Flowing water

6. Which international report first popularised the term 'sustainable development'?

a) Agenda 21

✓ **b) Brundtland Commission Report**

c) Rio Declaration

d) National Forest Policy

7. The older alluvial soil, found away from active floodplains, is known as?

a) Khadar

b) Regur

✓ **c) Bangar**

d) Laterite

8. Which soil type develops from intense leaching under alternating wet and dry tropical seasons?

a) Alluvial

b) Black

c) Arid

✓ **d) Laterite**

9. Which of these is a category used in classifying land under 'land use pattern'?

a) Gross domestic product

✓ **b) Net sown area**

c) Balance of trade

d) Sericulture

10. Which measure directly slows water flow down a slope by aligning ploughing with its level lines?

a) Strip cropping

✓ **b) Contour ploughing**

c) Shelterbelt planting

d) Afforestation

B. True or False

1. Resources are freely available gifts of nature that need no human intervention to be useful. -- FALSE
2. The 1992 Rio Earth Summit adopted Agenda 21 to promote sustainable development. -- TRUE
3. Bangar soil is younger than khadar soil. -- FALSE
4. Black soil is also known as regur soil. -- TRUE
5. Contour ploughing speeds up the flow of water down a slope. -- FALSE
6. Overgrazing is a major cause of land degradation in states like Gujarat and Rajasthan. -- TRUE
7. Net sown area refers only to land sown more than once in an agricultural year. -- FALSE
8. Laterite soil forms well in regions with alternating wet and dry seasons. -- TRUE

C. Match the Following

Column A	Column B
1. Bangar	a) Rows of trees planted to block wind erosion
2. Khadar	b) Newer alluvial soil deposited near riverbanks
3. Regur	c) Black soil especially suited to cotton
4. Laterite	d) Older alluvial soil away from the river floodplain
5. Kankar	e) Farming along slope contours to slow runoff
6. Gully erosion	f) Calcium-rich nodules found in dry-region soils
7. Shelterbelt	g) Deep channels cut by concentrated water flow
8. Contour ploughing	h) Soil formed by intense leaching in a tropical climate

Answers: 1-d, 2-b, 3-c, 4-h, 5-f, 6-g, 7-a, 8-e

Higher-Order Thinking (HOTS) Questions -- Model Answers

Q1. A region rich in resources can remain economically backward, while a resource-poor region can prosper. What does the chapter suggest explains this, and do you agree?

> **Answer:** The chapter links this to the presence or absence of matching technology and institutional development, pointing to the history of colonisation as an example of resource-rich regions being exploited by more technologically advanced outsiders. A resource-poor region can still prosper if it has strong infrastructure, skilled labour and effective institutions. This suggests that resources alone do not guarantee development; the capacity to use them wisely matters just as much.

Q2. How might expanding net sown area at the cost of pasture and forest land create long-term problems even while boosting short-term food output?

> **Answer:** Converting pasture and forest into farmland can raise grain output quickly, but it removes grazing land for livestock and the tree cover that once buffered erosion. Over time, the loss of forest and pasture accelerates soil degradation and reduces the natural checks on runoff described in the chapter. The short-term gain in food production can therefore come at the cost of long-term soil fertility and ecological stability.

Q3. Suggest two locally appropriate methods a farmer in a hilly, high-rainfall area could use to limit soil erosion, and explain why each suits that terrain.

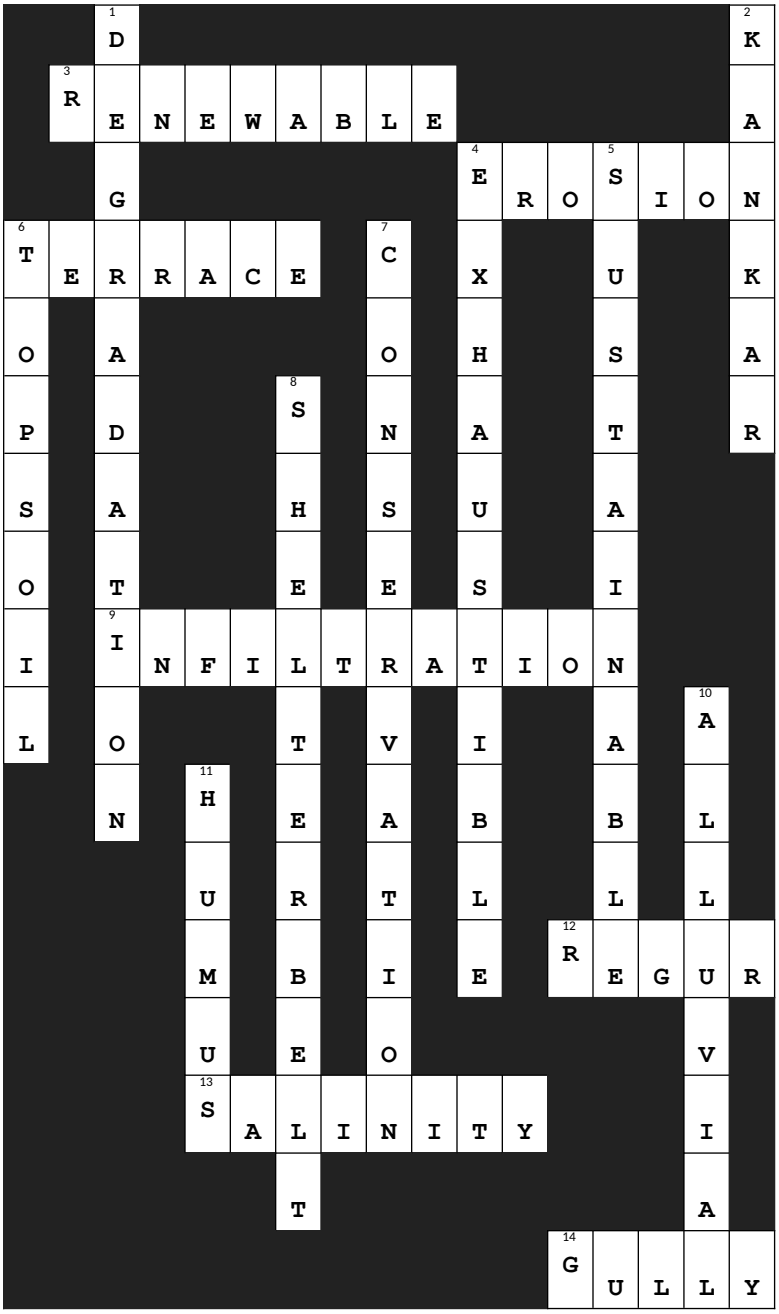
Answer: Terrace cultivation would suit steep hill slopes because cutting the land into level steps physically slows the downhill flow of monsoon rainwater. Contour ploughing would also help on gentler hill gradients, since aligning furrows with the slope's contour lines prevents water from forming fast-moving channels straight down the hillside. Both methods work by breaking the continuous downward path of water rather than trying to stop rainfall itself.

Q4. Why might a resource-planning policy that works well in Punjab fail if applied unchanged to Arunachal Pradesh?

Answer: Punjab's plains have high agricultural potential, strong irrigation infrastructure and dense population, so plans built around intensive farming and canal systems suit it well. Arunachal Pradesh instead has abundant water and forest resources but very limited infrastructure and different terrain, so the same farm-intensive approach would not fit its physical or economic reality. Resource planning has to be tailored regionally, exactly as the chapter argues when discussing states with very different resource profiles.

Puzzle Pack -- 10 Puzzles for This Chapter

1. Crossword


1 D
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4 E ROO 5 S IO N
6 T ERRACE 7 C X U K
O A O H S A
P D 8 S N A T R
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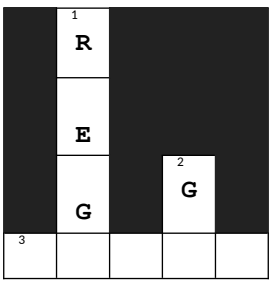
O T E E S I
9 I NFILTRATION A
L O T V I A 10 A
N 11 H E A B B L
U R T L L L
M B I E 12 R EGUR
U E O V
13 S ALINITY I
T A
14 G ULLY

2. Mini Crossword



H	U	M	U	S
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3. Word Search

R	E	N	E	W	A	B	L	E	A	C	H	I	N	G
C	O	N	S	E	R	V	A	T	I	O	N	A	W	N
Y	D	B	I	D	E	G	R	A	D	A	T	I	O	N
T	S	A	L	I	N	I	T	Y	W	J	B	I	L	O
E	T	I	R	E	T	A	L	T	A	T	T	F	L	V
J	P	A	S	T	U	R	E	U	Q	A	L	Y	A	E
T	O	P	S	O	I	L	X	E	R	O	Z	E	F	R
A	P	G	O	V	C	O	N	T	O	U	R	R	L	G
T	L	E	B	R	E	T	L	E	H	S	T	O	A	R
K	A	N	K	A	R	I	X	P	H	T	E	S	I	A
H	U	M	U	S	F	R	E	G	U	R	R	I	V	Z
E	L	B	A	N	I	A	T	S	U	S	R	O	U	I
O	J	U	I	R	A	G	N	A	B	N	A	N	L	N
E	L	B	I	T	S	U	A	H	X	E	C	L	L	G
S	K	R	E	S	O	U	R	C	E	E	E	K	A	J

4. Cryptogram

Encoded: GQVCSAF YFQBBOBJ IAVBZ FQBE QBE ZKOF OBIK FQZIOBJ VCZKAVGCZ.

Plain: Careful planning turns land and soil into lasting resources.

Key: A=U B=N C=E D=H E=D F=L G=C H=M I=T J=G K=O L=W M=K N=Z O=I P=J Q=A R=V S=F T=Y U=B V=R W=X X=Q Y=P Z=S

5. Caesar Coded Message

Encoded: YLZVBYJLZ HUK KLCLSVWTLUA. JHYLMBS WSHUUPUN ABYUZ SHUK HUK ZVPS PUAV SHZAPUN YLZVBYJLZ.

Plain: Resources and Development. Careful planning turns land and soil into lasting resources.

Shift: 7

6. Word Scramble

1. ATREERC → TERRACE

2. SSLINEUAABT → SUSTAINABLE

3. RTAEUSP → PASTURE

4. EENEABLRW → RENEWABLE

5. URCRSEOE → RESOURCE

6. HLCIAENG → LEACHING

7. RAAHDK → KHADAR

8. NOROSEI → EROSION

9. LVULAIAL → ALLUVIAL

10. OCTUONR → CONTOUR

7. Acrostic

R -- RESOURCE

E -- EXHAUSTIBLE

S -- SUSTAINABLE

O -- OVERGRAZING

U -- ALLUVIAL

R -- RENEWABLE

C -- CONSERVATION

E -- EROSION

S -- SHELTERBELT

Theme: RESOURCES

8. Match the Pairs

A → 8

B → 4

C → 6

D → 5

E → 7

F → 2

G → 3

H → 1

9. Fill in the Blanks

1. Farmers plough along a slope's level lines, a technique called _____ ploughing. → CONTOUR

2. The older, less fertile alluvial soil lying away from river floodplains is known as _____. → BANGAR

3. Rows of trees planted to reduce wind-driven soil loss are called a _____. → SHELTERBELT

4. Development that does not compromise the needs of future generations is called _____ development. → SUSTAINABLE

5. Excess salt build-up in over-irrigated soil is called _____. → SALINITY

6. Black cotton soil is also known by its local name, _____. → REGUR

7. Soil deposited by rivers across the northern plains is called _____ soil. → ALLUVIAL

8. Deep channels cut by fast-flowing water on bare land are known as _____ erosion. → GULLY

10. Odd One Out

1. Erosion -- it is a process, not a soil type

2. Afforestation -- it restores land rather than degrading it

3. Gully erosion -- it is a form of erosion, not a control method

4. Renewable -- classifies exhaustibility, not ownership